

METHODS AND MICROORGANISMS FOR PRODUCTION OF PANTO-COMPOUNDS

Abstract of the Disclosure

5 The present invention features methods of producing panto-compounds
(*e.g.*, pantothenate) using microorganisms in which the pantothenate biosynthetic
pathway and/or the isoleucine-valine biosynthetic pathway and/or the coenzymeA
biosynthetic pathway has been manipulated. Methods featuring ketopantoate reductase
overexpressing microorganisms as well as aspartate α -decarboxylase overexpressing
10 microorganisms are provided. Methods of producing panto-compounds in a precursor-
independent manner and in high yield are described. Recombinant microorganisms,
vectors, isolated nucleic acid molecules, genes and gene products useful in practicing
the above methodologies are also provided. The present invention also features a
previously unidentified microbial pantothenate kinase gene, *coaX*, as well as methods of
15 producing panto-compounds utilizing microorganisms having modified pantothenate
kinase activity. Recombinant microorganisms, vectors, isolated *coaX* nucleic acid
molecules and purified CoaX proteins are featured. Also featured are methods for
identifying pantothenate kinase modulators utilizing the recombinant microorganisms
and/or purified CoaX proteins of the present invention.

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